astronomer on the heliometer, which in his hands acquired so universal a reputation; to sidereal astronomy, with the memoirs relating to the parallax of 61 Cygni, the measures of the principal members of the Pleiades, to which Dr. Engelmann has added a chart of the group containing stars visible in a telescope of 10·11 cm. aperture, or to "about 10·11 magnitude," the stars not found in Argelander's *Durchmusterung* having a distinguishing mark. Several mathematical essays follow.

MIRA CETI.—Reference is often made in treatises on astronomy to the unusual degree of brilliancy attained by this variable star at the maximum of 1779. From the observations of Bode, Herschel, and Wargentin, we have the following particulars of the augmentation and diminution of brightness in that year.

Aug. 22.—Invisible in an ordinary 2-feet telescope.

Sept. 8.—Seen with the same instrument but very faint.

Sept. 18.—Immediately visible to the naked eye according to Herschel. Bode estimated it 4m.

Oct. 5 and 6.—Already much brighter than Menkar (*α* Ceti).

Oct. 15-19.—Equal to *α* Arietis on 15th, and still brighter on the 19th; the light reddish.

Oct. 30.—According to Wargentin, it was equal to Aldebaran and of the same colour, or even of the redness of Mars which was observable the same night. In a 10-feet achromatic Mira shot out vivid red rays. Herschel considered it midway in brightness between *α* Arietis and Aldebaran.

Nov. 2.—There was even an increase, in the judgment of Herschel.

Nov. 11.—Visible as early as Aldebaran and Mars.

Nov. 20.—As bright as, but not brighter than stars of the second magnitude, according to Herschel, but on the 25th much brighter than Menkar, though less than Aldebaran, according to Wargentin.

Dec. 4.—Only equal to *α* Arietis.

Dec. 7 and 10.—So much diminished since Nov. 25, that it was now hardly equal to Menkar, and its colour was now whiter.

Dec. 25.—Before the moon rose, equal to *γ* Ceti, or of the third magnitude.

Dec. 29.—Only a little brighter than the fourth magnitude; not equal to *γ* or *δ* Ceti.

Argelander gives for the date of maximum 1779, Nov. 6.

THE TASMANIANS

THE *historical* period of this singular race of mankind has lasted no longer than a century, for up to one hundred years ago they had unimpeded sway in the island of Van Diemen. Once invaded by Europeans, they had inevitably to succumb, and they gradually but speedily dwindled away, the last of them having died about two years ago, so that now they are completely extinct.

The island when discovered by Tasman contained about 7,000 inhabitants. In the year 1803 it was annexed by Britain for a penal settlement. Hatred, amounting to display of violence, broke out between the aborigines and the criminal occupiers of the soil. The scattered remnants of the native tribes were subsequently gathered together, and provided for by the Government at various retreats, until the last of the race in course of time passed away. Dr. Barnard Davis, F.R.S., the well-known ethnologist, in a recent paper,[1] endeavours to prove by the comparison of a skeleton, and some skulls of an Australian and a Tasmanian, that these two people belonged to two distinct races of man, having been previously erroneously confounded together.

1 "On the Osteology and Peculiarities of the Tasmanians, a Race of Man Recently become Extinct." Reprint 4to from the "Natuurkundige Verhandelingen der Hollandsche Maatschappij der Wetenschappen." 3rd Verz. Deel II., No. 4. Illustrated by four splendid lithographic plates.

Almost the only relics which the Tasmanains have left behind them are their bones. Fortunately before the entire extinction of the race, men of science had begun to see the importance of the study of craniology, so that a few skulls, but still only a few, have been collected and preserved. One chief reason of the scarcity of crania is the manner of the disposal of the dead—by fire. These were often placed in a hollow tree, surrounded by spears, so that on the occurrence of any bush fire the bones even were certain to be consumed. Two out of the twelve skulls in Dr. Davis' collection have been rescued from fire. Up to the last three years there was not a single Tasmanian skeleton in any European collection. At the present time there are four in England—two, one a male and the other a female, being in the Museum of the Royal College of Surgeons. Two skeletons, also of opposite sexes, are in the Museum of the Royal Society of Tasmania, Hobart Town.

The chief works of art, of which, unfortunately, but few are preserved, consist of beautiful necklaces made by stringing the iridescent shells of *Purpura elenchus* upon thin sinews, also of very rude implements, chippings of a dark-coloured chert, exactly like that used by the Kanakas of the Sandwich Islands, and, lastly, fishing nets. The natives on the south and west coasts make a kind of "catamaran" from rushes. The spears, about ten feet long, are made of the heavy, hard wood of the "tea tree" pointed and hardened in the fire, and straightened by being passed from end to end between the teeth.

For long the Tasmanians and Australians were confounded together, and Europeans who visited the country did not improve matters by calling both races, without distinction, "black," though the colour of their skin was removed from a negroid blackness, being of a "dull dark" colour in the Tasmanian, and "chocolate, coffee-coloured, or nutmeg-coloured" in the Australian.[1] There was, moreover, a striking difference between the two people, the Tasmanian being stout and broad-shouldered, while there was such a degree of lankness in the Australian as to cause the former to appear stout. Prof. Huxley, who visited both countries, says of the former people that they "are totally different from the Australians."

The Tasmanians were rather short, being below the average of Europeans in stature. The mean height of twenty-three men was found to be 5 ft. 3¼ in., or 1,618 mm.; that of twenty-nine women was only 4 ft. 11¼ in., or 1,503 mm. There are, however, instances, as in other races, of tall stature among the Tasmanians, for several have been found to be 6 ft. in height by measurement. The Australians are a taller people. Out of thirteen Shark's Bay natives who were measured twelve were 5 ft. 10 in. in height, but "there seems," observes Mr. Oldfield, "as much variation among these savages as there is among civilised nations, the mean height being no greater than it is in England." The Tasmanians differed strikingly from the Australians in being robuster; and that this is no superficial character, but one of race, can be proved by reference to their bones. A question, now unfortunately too late to solve, is—What was the amount of difference between the different tribes of Tasmania? For it is known that there were tribes in the island differing to the extent of the possession of dialects mutually unintelligible. With regard to the Australians, some ethnologists maintain that they have physical characters so distinct as to admit of being divided into a woolly-haired and a flowing-haired race.

There is, moreover, a striking difference in the structure of the hair in the two races respectively; that of the Australians growing in flowing ringlets, while the hair of the Tasmanian, being excentrically elliptical on section, has a tendency to twist, and thus comes to grow in small

1 It is to be hoped that in future, in order to avoid such vagueness of terminology, travellers will adopt M. Broca's useful colour-types. *Vide* the British Association's "Anthropological Notes and Queries."

© 1876 Nature Publishing Group

corkscrew locks. This peculiarity allowed them to load their hair with red ochre, so that it hung down in separate ringlets. In colour it is of a very dark brown, popularly called black, approaching in tint to No. 41[1] of Prof. Broca's "Colour Types." It was difficult to investigate the hair of the women, as, from an idea that it added to their charms, they shaved their heads either with a sharp stone or with broken bottles, on the advent of civilisation! The women among the Mincopies of the Andaman Islands have the same custom. It is a curious coincidence also that the latter race, as did the Tasmanians, were in the habit of carrying fragments of the bones of their relations, as a mark of affection, suspended necklace-wise round their necks. The peculiar growth of hair in spiral tufts is *natural* to these races, which have peculiar crisp excentrically elliptical hair, and is no work of art, being of spontaneous growth, contrary to the assertions of those whose ideas of race are founded on missionary models. The hair on all the other parts of the body, of which there was no deficiency, was of the same character, there being even on the borders of the whiskers little pellets of hair on the cheeks, "like pepper-corns." The nose of the Tasmanian was not elevated, but very broad across the alæ. The upper lip was long, and the mouth wide, but of a pleasant, calm expression. In the strength of the jaws, moreover, the size of the teeth, and the large area of the grinding surface of the molars, the Tasmanians agree with the Australians, and contrast strikingly with European races.

There is a peculiarity in the physiognomy of the Tasmanians which is difficult to describe to others, but which is obvious to those, who, like Dr. Davis, have long studied their crania. It consists in "a particular roundness, or spherical form, which manifests itself in all the features." Dr. Paul Topinard, too, states ("Etude sur les Tasmaniens," Mém. de la Soc. d'Anthrop. de Paris, iii. 309) that there are certain marks in the cranium which would "enable him to recognise it anywhere."

The thickness and density of the bones of the skull, even in women, is very striking, and "constitutes a decided peculiarity of the race." The frontal and parietal bones, for instance, of a small woman's skull, from which the calvarium had been sawn off, was 0·4 inch, or 6 millimetres, in thickness. The orbits in the Tasmanian skull are, according to Dr. Topinard, small. He says, moreover, that the skull has a sinister expression, while, on the other hand, Dr. Davis regards the countenance of the Tasmanian as a "benevolent, if not mild," one.

With regard to prognathism, both in superior alveolar and in inferior alveolar, or *mental* prognathism, the Australian cranium much exceeds that of the Tasmanian.[2] This is well seen in Dr. Davis's plates (Tab. II. III.).

Touching cranial capacities, Dr. Topinard concludes that "the anterior lobes of the brain have *nearly the same* relative development in the two series of skulls, *i.e.*, the Tasmanians and others" [that is, Parisian and Breton skulls taken for comparison]. "The anterior part of the posterior cerebral lobes is a *little less* developed in the Tasmanians. The posterior part is *much less* developed. The cerebellum is more voluminous in the Tasmanians, by a quantity approximately equal to the loss which the posterior cerebral lobes undergo."

On examining the skeleton of a Tasmanian it will be observed that the bones have the usual robustness seen in European skeletons, differing thus quite from those of the Australian, which are slender. In two skeletons each belonging to one of these races, the last rib was in both three inches long, while in those of an Australian woman described by Prof. Owen this rib was but little more than one inch in length. The ilia are decidedly more everted in the Tasmanian than in the Australian. The patellæ are also larger in the former. There is no olecranon foramen in the humerus of either skeleton. The tibiæ are, moreover, straight in both, and not of sabre form.

In twenty-four Australian skulls of both sexes, there was a mean weight of brain of 41·38 ounces, or a mean internal capacity of 81·1 cubic inches, while in eleven Tasmanian skulls of both sexes the mean cerebral weight was 42·25 ounces, or a corresponding cranial capacity of 82·8 cubic inches. From this it may be deduced that the Tasmanian excels the Australian in having a brain ·87 oz., or twenty-four grammes heavier, or an internal capacity of skull superior to the extent of 1·7 cubic inch. This squares with Dr. Topinard's observations.

This being the case, we should suppose that the inventive powers of the Tasmanians would exceed those of the Australians; but this, possibly owing to some extra stimulus to the invention of the latter race, is not the case. It seems, indeed, probable that it was the abundance of food in Tasmania which was the cause of the non-invention of two of the implements so necessary to the Australian when engaged in the chase, to wit, the "boomerang" and the "wommera," or throwing stick, by which spurs were hurled, both of which are indigenous to Australia, not being known elsewhere. The Tasmanian had, indeed, the "waddy," a short stick of hard wood, which they threw with a rotatory motion so as to kill a bird on a tree, but this was a far less elegant weapon than its Australian representative, the boomerang. As evidence that the invention of implements is not commensurate, wholly and simply, with cerebral development, we must bear in mind that the bow and arrow, so useful to the Asiatics, Pacific Islanders, and American Indians, was never discovered either by the Tasmanian or Australian.

A surprising deficiency among the Australian and Tasmanian tribes is a total absence of pottery, and this among many races that had no substitute in the pericarp of fruits. This is a hard fact for those who would fain believe in the derivation of Australian and Tasmanian from other races. In some parts of Australia where long drought has been suffered the natives have actually used the dried calvarium of a deceased person, cementing the sutures with a vegetable gum, upon which they stick the shell of an oyster to protect the resin from being rubbed off. The Tasmanians were further quite unacquainted with the shield. Nothing is so demonstrative of the complete isolation of the Tasmanians as the fact that, though separated from Australia by a strait but little more than 300 miles wide, there had been no intercommunication from either side between the two countries until the advent of Europeans. This fact tells strongly against those who believe in the almost universal spontaneous diffusion of races. The Tasmanians further had no native dogs, nor was the practice of circumcision known among them, facts tending further to prove the isolation of the two races. Neither this race, moreover, nor the Australians of the south, were in possession of boats, so that even the intermediate islands in the straits were quite uninhabited. There is reason, however, to believe that, like the Australians, some tribes of the Tasmanians were accustomed to punch out the front teeth. This rests only on osteological evidence, as no account has ever been given of the prevalence of the custom among this race.

Finally, "all that can be said with truth is that the Tasmanians are not Australians, they are not Papuans, and they are not Polynesians. Although they may present resemblances to some of these, they differ from them substantially and essentially." From this it may be concluded that the Tasmanians were one of the most isolated races of mankind which ever existed. They have been one of the earliest races to perish totally by coming in contact with Europeans, and "their record now belongs wholly to the past."

J. C. G.

[1] The darkest.

[2] In a skull, however, of a male Tasmanian about thirty years o age, belonging to Dr. Davis, the prognathism, both mental and supra-alveolar, is greater than in that of an Australian youth about twenty years old.

© 1876 Nature Publishing Group